AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. **(Currently Amended)** A transmitter in a fiber optic system, the transmitter comprising:

a driver circuit configured to receive a modulated electrical signal and to have a driver circuit output impedance;

a light emitting source having a light emitter impedance different than the driver circuit output impedance, the light emitting source configured to receive the modulated electrical signal such that it produces a modulated optical signal proportional to the modulated electrical signal; and

a ~~tapered~~ transmission line comprising two lines, the transmission line having a length between a first end and a second end, the two ~~tapered transmission~~ lines coupled to the driver circuit at the first end and to the light emitting source at the second end such that the two ~~transmission~~ lines transmit the modulated electrical signal from the driver circuit to the light emitting source, the two ~~transmission~~ lines configured such that impedance of the transmission line [[lines]]gradually changes over the length so that the two ~~tapered transmission~~ lines match the impedance of the driver circuit at the first end and match the impedance of the light emitter at the second end.

2. **(Currently Amended)** The transmitter of claim 1 wherein the two ~~tapered transmission~~ lines gradually change the capacitance and impedance along the length such that the two tapered transmission lines gradually match the driver circuit output impedance at the first end to the light emitter impedance at the second end without use of lumped circuit components.

3. **(Currently Amended)** The transmitter of claim 1 wherein the ~~tapered transmission lines comprise~~ two lines are spaced apart from each other in a transmission plane, the transmission plane being located adjacent a ground plane.

4. **(Original)** The transmitter of claim 3 wherein the two lines are spaced apart from each other at the first end by a first distance and spaced apart from each other at the second end by a second distance, the first distance being greater than the second distance.

5. **(Original)** The transmitter of claim 3 wherein the two lines are spaced apart from each other at the first end by a first distance and spaced apart from each other at the second end by a second distance, the first distance being less than the second distance.

6. **(Original)** The transmitter of claim 3 wherein the lines in the transmission plane are spaced apart from the ground plane at the first end by a first distance and wherein the lines in the transmission plane are spaced apart from the ground plane at the second end by a second distance, the first distance being greater than the second distance.

7. **(Original)** The transmitter of claim 3 wherein the lines in the transmission plane are spaced apart from the ground plane at the first end by a first distance and wherein the lines in the transmission plane are spaced apart from the ground plane at the second end by a second distance, the first distance being less than the second distance.

8. **(Currently Amended)** The transmitter of claim 3 wherein each of the lines has a varying diameter over the length of the transmission line [[lines]]such that the diameters of the two lines at the first end are smaller than the diameters of the two lines at the second end.

9. **(Currently Amended)** The transmitter of claim 3 wherein each of the lines has a varying diameter over the length of the transmission line [[lines]]such that the diameters of the two lines at the first end are larger than the diameters of the two lines at the second end.

10. **(Original)** The transmitter of claim 1 wherein the driver circuit output impedance is higher than the light emitter impedance.

11. **(Currently Amended)** The transmitter of claim 1 wherein the driver circuit output impedance is between 50 Ohms and 75 Ohms and the light emitter impedance is between 5 Ohms and 25 Ohms such that the [[that]]transmission line impedance gradually changes over its length from between 50 Ohms and 75 Ohms to between 5 Ohms and 25 Ohms.

12. **(Original)** The transmitter of claim 1 wherein the driver circuit is a laser driver circuit and the light emitter source is a laser diode.

13. **(Original)** The transmitter of claim 1 wherein the driver circuit is a light emitting diode driver circuit and the light emitter source is a light emitting diode.

14. **(Currently Amended)** The transmitter of claim 1 wherein the driver circuit output impedance is 50 Ohms and the light emitter impedance is 5 Ohms and the two ~~transmission~~ lines taper to gradually decrease impedance so as to match the driver circuit and the light emitter source.

15. **(Currently Amended)** A fiber optic communication system comprising:

a signal transmitter that produces an optical signal of varying light intensity, the transmitter further comprising:

a driver circuit configured to receive an original modulated electrical signal and to generate a driver electrical signal, the driver circuit configured to have a driver circuit output impedance;

a light emitting source having a light emitter impedance different than the driver circuit output impedance, the light emitting source configured to receive the original modulated electrical signal such that it produces the optical signal of varying light intensity that is proportional to the original modulated electrical signal; and

a ~~tapered~~ transmission line comprising two lines coupled between the driver circuit and the light emitting source such that the two ~~transmission~~ lines transmit the driver electrical signal from the driver circuit to the light emitting source, the two ~~tapered transmission~~ lines configured ~~tapered~~ such that impedance of the transmission line [[lines]]gradually changes such that the two ~~tapered transmission~~ lines match both the driver circuit output impedance and the light emitter impedance;

an optical fiber coupled to the signal transmitter that receives and transmits the optical signal; and

a receiver coupled to the optical fiber that receives the optical signal and converts the received optical signal into an output electrical signal that is a replica of the original modulated electrical signal.

16. **(Currently Amended)** The fiber optic communication system of claim 15 wherein the two ~~tapered transmission~~ lines gradually change the impedance along a length of the transmission line such that the two ~~tapered transmission~~ lines gradually match the driver circuit output impedance to the light emitter impedance without use of lumped circuit components.

17. **(Currently Amended)** The fiber optic communication system of claim 15 wherein the ~~tapered transmission lines comprise~~ two lines are spaced apart from each other immediately adjacent the driver circuit by a first distance and spaced apart from each other immediately adjacent the light emitter by a second distance, the first distance being greater than the second distance.

18. **(Currently Amended)** The fiber optic communication system of claim 15 wherein the ~~tapered transmission lines comprise~~ two lines are spaced apart in a transmission plane, the transmission plane being located adjacent a ground plane and wherein the two lines in the transmission plane are spaced apart from the ground plane immediately adjacent the driver circuit by a first distance and wherein the two lines in the transmission plane are spaced apart from the ground plane immediately adjacent the driver circuit by a second distance, the first distance being greater than the second distance.

19. **(Currently Amended)** The fiber optic communication system of claim 15 wherein the ~~tapered transmission lines comprise~~ two lines each have a ~~having~~ varying diameter such that the diameters of the two lines immediately adjacent the driver circuit are smaller than the diameters of the two lines immediately adjacent the light emitting source.

20. **(Canceled)**

21. **(Previously Presented)** The transmitter of claim 3 wherein a distance between the two lines changes exponentially from the first end to the second end.

22. **(Previously Presented)** A transmitter, comprising:

a driver circuit configured to receive a modulated electrical signal and to have a driver circuit output impedance;

a light emitting source having a light emitter impedance different than the driver circuit output impedance, the light emitting source configured to receive the modulated electrical signal such that the light emitting source produces a modulated optical signal proportional to the modulated electrical signal; and

a transmission line comprising first and second lines, each of the first and second lines including a first end coupled to the driver circuit and a second end coupled to the light emitting source, the first and second lines being spaced apart from each other such that a first distance between the respective first ends of the first and second lines is different from a second distance between the respective second ends of the first and second lines.

23. **(Previously Presented)** The transmitter as recited in claim 22, wherein a change from the first distance to the second distance is substantially linear.

24. **(Previously Presented)** The transmitter as recited in claim 22, wherein the first distance is greater than the second distance.

25. **(Previously Presented)** A transmitter, comprising:

a driver circuit configured to receive a modulated electrical signal and to have a driver circuit output impedance;

a light emitting source having a light emitter impedance different than the driver circuit output impedance, the light emitting source configured to receive the modulated electrical signal such that the light emitting source produces a modulated optical signal proportional to the modulated electrical signal; and

a transmission line comprising a first line and a second line, each of the first and second lines including a first end coupled to the driver circuit and a second end coupled to the light emitting source, and the first and second lines configured such that:

a first end of the first line has a different cross-sectional size than a cross-sectional size of a second end of the first line; and

a first end of the second line has a different cross-sectional size than a cross-sectional size of a second end of the second line.

26. **(Previously Presented)** The transmitter as recited in claim 25, wherein the first and second lines are spaced apart from each other such that a first distance between the respective first ends of the first and second lines is different from a second distance between the respective second ends of the first and second lines.

27. **(Previously Presented)** The transmitter as recited in claim 26, wherein the first distance is greater than the second distance.

28. **(Previously Presented)** The transmitter as recited in claim 25, wherein the respective first ends of the first and second lines have relatively smaller cross-sectional areas than the respective second ends of the first and second lines.

29. **(Previously Presented)** A transmitter, comprising:

a driver circuit configured to receive a modulated electrical signal and to have a driver circuit output impedance;

a light emitting source having a light emitter impedance different than the driver circuit output impedance, the light emitting source configured to receive the modulated electrical signal such that the light emitting source produces a modulated optical signal proportional to the modulated electrical signal; and

a transmission line that includes first and second lines, each of the first and second lines including a first end coupled to the driver circuit and a second end coupled to the light emitting source, and a material composition of the transmission line varying over a length of the transmission line.

30. **(Previously Presented)** A transmitter, comprising:

a driver circuit configured to receive a modulated electrical signal and to have a driver circuit output impedance;

a light emitting source having a light emitter impedance different than the driver circuit output impedance, the light emitting source configured to receive the modulated electrical signal such that the light emitting source produces a modulated optical signal proportional to the modulated electrical signal;

a transmission line that includes first and second lines, each of the first and second lines including a first end coupled to the driver circuit and a second end coupled to the light emitting source; and

a ground plane having a first end coupled to the driver circuit and a second end coupled to the emitting source, the ground plane being arranged such that a first distance between the ground plane and the transmission line at the driver circuit is different from a second distance between the ground plane and the transmission line at the light emitting source.

31. **(Previously Presented)** The transmitter as recited in claim 30, wherein the first distance is greater than the second distance.